

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
Before the Board of Patent Appeals and Interferences

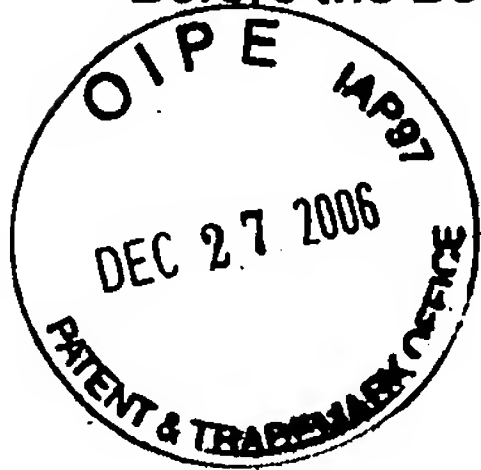
In re Patent Application of

O'BRIEN et al

Serial No. 10/501,867

Filed: July 20, 2004

Title: LIGHT COVER



Atty Dkt. 540-513

C# M#

TC/A.U.: 2875

Examiner: R. May

Date: December 27, 2006

27W AEF

**Mail Stop Appeal Brief - Patents**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

☐ **Correspondence Address Indication Form Attached.**

☐ **NOTICE OF APPEAL**

Applicant hereby **appeals** to the Board of Patent Appeals and Interferences

from the last decision of the Examiner twice/finally rejecting applicant's claim(s). \$500.00 (1401)/\$250.00 (2401) \$

☒ An appeal **BRIEF** is attached in the pending appeal of the above-identified application \$500.00 (1402)/\$250.00 (2402) \$ 500.00

☐ Credit for fees paid in prior appeal without decision on merits -\$ ( )

☐ A reply brief is attached. (no fee)

☐ Petition is hereby made to extend the current due date so as to cover the filing date of this paper and attachment(s)  
One Month Extension \$120.00 (1251)/\$60.00 (2251)  
Two Month Extensions \$450.00 (1252)/\$225.00 (2252)  
Three Month Extensions \$1020.00 (1253)/\$510.00 (2253)  
Four Month Extensions \$1590.00 (1254)/\$795.00 (2254) \$

☐ "Small entity" statement attached.

Less month extension previously paid on -\$ ( )

**TOTAL FEE ENCLOSED \$ 500.00**

Any future submission requiring an extension of time is hereby stated to include a petition for such time extension.  
The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our **Account No. 14-1140**. A duplicate copy of this sheet is attached.

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By Atty: Stanley C. Spooner, Reg. No. 27,893

Signature: \_\_\_\_\_



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Patent Application of

O'BRIEN et al

Serial No. 10/501,867

Filed: July 20, 2004

For: LIGHT COVER

Confirmation No.: 5033

Atty. Ref.: 540-513

Group: 2875

Examiner: R. May

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**APPEAL BRIEF**

On Appeal From Group Art Unit 2875

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**APPEAL BRIEF**

Sir:

**I. REAL PARTY IN INTEREST**

The real party in interest in the above-identified appeal is BAE SYSTEMS plc by virtue of an Assignment of rights from the inventors to BAE SYSTEMS plc recorded July 20, 2004 at Reel 16115, Frame 155.

**II. RELATED APPEALS AND INTERFERENCES**

There are believed to be no related appeals, interferences or judicial proceedings with respect to the present application, other than the Pre-Appeal Brief Request for Review previously filed in this appeal.

### **III. STATUS OF CLAIMS**

Claims 1-7 and 9 stand rejected in the Final Official Action as modified by the Advisory Action mailed October 12, 2006. Claims 1-7 stand rejected under 35 USC §103 as being obvious over Gray (U.S. Patent 3,984,673) and Carlson (U.S. Patent 4,495,549). Claim 9 stands rejected as being anticipated by Gray.

### **IV. STATUS OF AMENDMENTS**

An Amendment under Rule 116 was filed September 21, 2006, canceling claim 8 and including the limitations of claim 8 into independent claim 1. In the Advisory Action mailed October 12, 2006, the Examiner advised that for the purposes of appeal, the proposed amendment would be entered and that claims 1-7 and 9 remain rejected. In view of the entered amendment, the rejection of claims 1-7 is now based upon 35 USC §103 over the Gray/Carlson combination. The rejection of claim 9 remains as in the Final Rejection as under 35 USC §102 as anticipated by the Gray reference.

### **V. SUMMARY OF THE CLAIMED SUBJECT MATTER**

Appellants' specification and figures provide an explanation of the claimed invention set out in independent claims 1 and 9, with each claimed structure addressed as to its location in the specification and in the figures.

Claim 1. A light cover arranged to be placed over a light source [element 16 as shown in Figure 2 and discussed on page 3, lines 27-30, page 4, lines 12-21, 25-27 and elsewhere in the specification] emitting infrared radiation, wherein said light cover comprises an aircraft exterior light cover [element 2 in Figures 1 & 2 as discussed on page 3, lines 10-19, page 4, lines 1-11 and elsewhere in the specification], wherein the light cover includes a reflective element [element 12 in Figures 1 & 2 and discussed on page 3, lines 21-25, page 4, lines 12-29 and elsewhere in the specification] angled [angle "A" as shown in Figure 2 and discussed on page 4, lines 22-25 and page 4, line 30 through page 5, line 2 and elsewhere in the specification] with respect to said light cover [2] for reflecting a portion of said emitted infrared radiation [shown as chain line 24 in Figure 2 and discussed on page 4, lines 16-19 and elsewhere in the specification] away from said light cover [2] and substantially away from said light source [16].

Claim 9. A light assembly [element 14 as shown in Figure 2 and discussed on page 3, lines 26-31, page 4, lines 12-14 and elsewhere in the specification] comprising:

a light source [element 16 as shown in Figure 2 and discussed on page 3, lines 27-30, page 4, lines 12-21, 25-27 and elsewhere in the specification] mounted within a housing [element 18 as shown in Figure 2 and discussed on page 3, lines 27-30, page 4, lines 16-19, & 22-29 and elsewhere in the specification] the

light source [16] emitting infrared radiation [included with light ray 22 shown in Figure 2 and discussed on page 4, lines 12-19 and elsewhere in the specification];

a light cover [element 2 in Figures 1 & 2 as discussed on page 3, lines 10-19, page 4, lines 1-11 and elsewhere in the specification] placed over said light source [16]; and

a reflective element [element 12 in Figures 1 & 2 and discussed on page 3, lines 21-25, page 4, lines 12-29 and elsewhere in the specification] located between said light source [16] and said light cover [2] and angled [angle "A" as shown in Figure 2 and discussed on page 4, lines 22-25 and page 4, line 30 through page 5, line 2 and elsewhere in the specification] with respect to said light cover [2], said reflective element [12] for reflecting a portion of the emitted infrared radiation [shown as chain line 24 in Figure 2 and discussed on page 4, lines 16-19 and elsewhere in the specification] away from the light cover [2] and substantially away from said light source [16].

## **VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

Claims 1-7 stand rejected under 35 USC §103 as being obvious in view of the Gray/Carlson combination.

Claim 9 stands rejected under 35 USC §102 as being anticipated by Gray.

## VII. ARGUMENT

Appellants' arguments include the fact that the burden is on the Examiner to first and foremost properly construe the language of the claims to determine what structure and/or method steps are covered by that claim. After proper construction of the claim language, the burden is also on the Examiner to demonstrate where a single reference (in the case of anticipation) or a plurality of references (in the case of an obviousness rejection) teaches each of the structures recited in independent claims 1 and 9.

The Court of Appeals for the Federal Circuit has noted in the case of *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick*, 221 USPQ 481, 485 (Fed. Cir. 1984) that "[a]nticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim."

Furthermore, the Court of Appeals for the Federal Circuit has stated in the case of *In re Rouffet*, 47 USPQ2d 1453, 1458 (Fed. Cir. 1998)

to prevent the use of hindsight based on the invention to defeat patentability of the invention, this court **requires** the examiner to show a **motivation** to combine the references that create the case of obviousness. In other words, the Examiner **must show reasons** that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed. (emphasis added).



**A. The prior art does not disclose an aircraft exterior light cover which includes "a reflective element angled with respect to said light cover"**

As noted in the Advisory Action, claims 1-3, and 7 would now be rejected under 35 USC §103 over Gray (US Patent 3,984,673) and Carlson (US Patent 4,495,549) in combination with claim 9 still rejected over 35 USC §102 over Gray.

The Examiner's admission on page 4 of the Final Rejection that "Gray fails to disclose the cover as comprising an aircraft exterior light cover" is very much appreciated.

In fact, the Gray reference teaches a lighting system for a hyperbaric chamber (a chamber having an abnormally high oxygen content for treating various illnesses which would otherwise present an explosion hazard). There is no allegation by the Examiner that the Gray patent has anything to do with aircraft or contains any suggestion of a problem with or solution to problems with aircraft external light covers. There is no suggestion that anything disclosed in Gray could even be adapted for an aircraft external light cover.

The Carlson reference is the only applied reference having anything to do with an aircraft exterior light cover, and Carlson recognizes the heating problem. However, instead of teaching a reflective element which is angled with respect to the light cover to reduce the IR radiation on the light cover, Carlson teaches a completely different solution to the problem of high intensity light source heating of

aircraft light covers. Carlson teaches the use of a fluid-tight cell 36 through which is circulated "a eutectic mixture of water and denatured ethylene glycol." (Carlson, column 6, lines 4-6). In effect, Carlson teaches a water cooling system which removes heat from the light cover, but does not remove IR radiation.

Thus, Carlson specifically teaches away from using a reflective element to reduce infrared radiation on an aircraft exterior light cover and instead teaches circulating "antifreeze" in order to remove heat from the exterior light cover. While Carlson recognizes the problem, he solves the problem in a completely different manner from that of the present inventors in the claimed invention.

Bamber (US Patent 5,017,327) is applied against claims 4 & 5 and has nothing to do with aircraft and aircraft exterior light cover or a reflective element angled with respect to the aircraft exterior light cover.

Gagnon (U.S. Patent 3,650,808) is applied against claim 6 and has nothing to do with an "aircraft exterior light cover" or a light cover which includes "a reflective element angled with respect to the light cover."

Thus, even if one of more of the above references were combined, they would not disclose the inventive combination of "an aircraft exterior light cover" including "a reflective element" where that reflective element is "angled with respect to said light cover" in order to reflect heat away from both the light cover and the light source as set forth in independent Claim 1 or claims 2-7 dependent thereon.

**B. The Examiner fails to provide any "reason" or "motivation" for combining references**

The Court of Appeals for the Federal Circuit has held in the case of *In re Rouffet*, 47 USPQ2d 1453, 1457-8 (Fed. Cir. 1998) that

to prevent the use of hindsight based on the invention to defeat patentability of the invention, this court **requires the examiner to show a motivation** to combine the references that create the case of obviousness. In other words, **the Examiner must show reasons** that the skilled artisan, confronted with **the same problems** as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed. (emphasis added).

In view of the above, the burden is on the Examiner to provide some "reason" or "motivation" for combining references. Inasmuch as claim 8 has been combined with claim 1, the Examiner's rejection of amended claim 1 is that of claim 8 in the Final Rejection, i.e., based upon §103 as unpatentable over the Gray/Carlson combination.

While the Examiner has made a simple conclusory statement that it would be obvious to one of ordinary skill in the art to combine Gray and Carlson, this does not meet the Court of Appeals' standard for providing an appropriate "reason" or "motivation." Gray teaches that reflective elements can be used on a hyperbaric chamber because of safety considerations in otherwise having a light in the highly oxidative atmosphere contained in the chamber. Carlson, the only reference which is aware of the high intensity light source problem with aircraft light systems,

discloses a completely different method of solving the problems of an aircraft light cover.

The Examiner has simply provided no "reason" or "motivation" why one of ordinary skill in the art attempting to solve the problem solved by Appellants' invention would even look at the Gray reference (having nothing to do with aircraft light covers and instead dealing with providing light in an oxidative atmosphere in a hyperbaric chamber). While he clearly might have reviewed the Carlson reference (since this is the only reference related to aircraft light covers), Carlson does not contain any indication or suggestion that the Gray teachings would be combinable or would even work if combined. The Examiner has simply failed to provide any motivation or reason for combining Gary and Carlson.

With respect to the other combinations, they would all include the Gray/Carlson combination and therefore the above comments with respect to claims 1-3, 7 and 9 are herein incorporated by reference, especially with the obviousness rejections of claims 4 and 5 over the Gray/Carlson in view of Bamber rejection and the rejection of claim 6 over the Gray/Carlson/Bamber and Gagnon combination. The burden is on the Examiner to establish a *prima facie* basis of obviousness and the Examiner has failed to meet this burden.

**C. The Carlson reference would actually lead one of ordinary skill in the art away from the claimed combination of elements**

As noted above, the Carlson reference - the only reference relating to an aircraft exterior light cover - teaches that the solution to the problem of heat generated by the light source is not to provide an IR reflective surface but rather to provide a fluid filled cell as part of the exterior light cover so as to conduct heat away from the light cover.

The present invention works on a completely different principle, in that it attempts to prevent heat from reaching the light cover by reflecting the IR component away by utilizing a reflective element "angled" with respect to the light cover. Carlson, while attempting to solve the light cover heating problem, goes in an entirely different direction from that of Appellants' claims, and instead, uses a water cooling system to absorb heat from the light cover.

The Court of Appeals for the Federal Circuit has consistently held that it is "error to find obviousness where references 'diverge from and teach away from the invention at hand'." *In re Fine*, 5 USPQ2d 1596, 1599 (Fed. Cir. 1988). Here, because Carlson teaches a dramatically different solution to the heat problem, it would lead one of ordinary skill in the art away from the claimed invention. The Examiner has not indicated how or why one of ordinary skill would ignore the Carlson teachings and, instead, use the claimed reflective element.

Thus, in view of the above, not only is there no reason to combine references, the Carlson reference - a necessary part of the rejection of each of the independent and dependent claims - would literally lead one of ordinary skill in the art to apply a different solution to the problem and not the claimed solution. Therefore there is no support for any rejection of claims 1-7 over the Gray/Carlson combination, either by itself, or in combination with Bamber, by itself or in combination with Gagnon

**D. The Gray reference does not anticipate the subject matter of claim 9**

Claim 9 is still rejected under 35 USC §102 as being anticipated by the Gray reference. As noted above in the *Lindemann* case, it is necessary for the Examiner to establish that every claimed element and every claimed interrelationship between elements is shown in the prior art in order to support a §102 rejection. All of the elements and interrelationships set out in claim 9 are not shown in the Gray reference.

Firstly, Gray does not appear to teach the claimed "light cover." While claim 9 is not specifically limited to aircraft applications, the definition of light cover set out in the specification still applies to the same term used in the claims, i.e., that the light cover be transparent to visible light (specification, page 3, lines 10-12). It is this transparency which creates the problem which is solved by the present invention.

The Examiner alleges that “Gray discloses . . . a light cover 10 . . .” (Final Rejection, page 2, third line from the bottom) and suggests that this is analogous to the claimed “light cover” recited in claim 9. However in Gray, the “cover” is specified as being made of “sheet metal or insulated material” (Col. 2, lines 51-52). Thus, the Gray light cover is not transparent and certainly would not suffer from the problems solved by the present invention.

Secondly, since Gray does not teach a light cover, it certainly cannot teach that such a cover is placed “over” the light source, which is the interrelationship between the light source and the light cover is specified in the claim. The Examiner does not indicate how he believes the light cover 10 of Gray is placed “over” the light source. While the metal housing 10 certainly surrounds the light source 16, it is not a light cover and therefore cannot meet the claimed interrelationship.

Thirdly, claim 9 specifies the interrelationship between the reflective element and its location “between said light source and said light cover.” Because Gray lacks the claimed “light cover”, the interrelationship of the reflective element being located between the light source and the light cover cannot be present.

Since, at least three structures and/or structural interrelationships which are specified in claim 9 are missing from the Gray reference, there is no support for any continued rejection of claim 9 under 35 USC §102.



### **VIII. CONCLUSION**

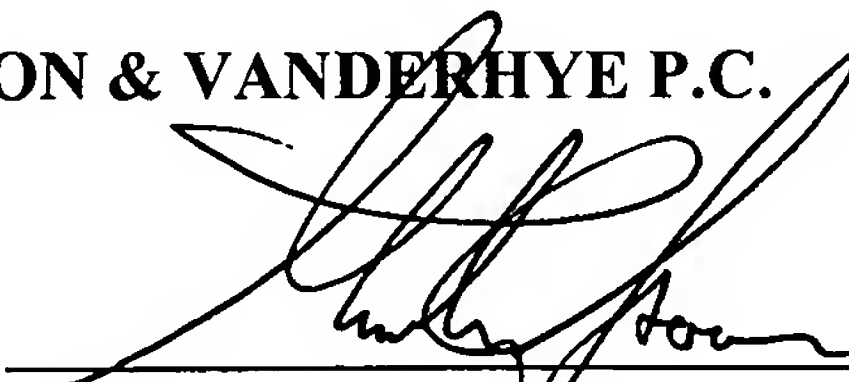
None of the references disclose an aircraft exterior light cover where that light cover has a reflective element angled with respect to the light cover for reflecting heat. Additionally, the Examiner has failed to provide any "reason" or "motivation" for combining the references. The Examiner apparently ignores the fact that the Carlson reference (a necessary reference in each of the obviousness rejections) literally would lead one of ordinary skill in the art attempting to solve Appellants' problems away from any solution relating to reflective elements and towards the Carlson solution of utilizing antifreeze to cool the exterior light cover. For these reasons, there is no support for an obviousness rejection of claims 1-7. As noted, claim 9 specifies structures and structural interrelationships which are missing from the Gray reference and therefore the §102 anticipation rejection fails.

Thus, and in view of the above, the rejection of claims 1-7 and 9 under 35 USC §§102 and 103 is clearly in error and reversal thereof by this Honorable Board is respectfully requested.

Respectfully submitted,

**NIXON & VANDERHYTE P.C.**

By: \_\_\_\_\_

  
Stanley C. Spooner  
Reg. No. 27,393

SCS:kmm  
Enclosure





## IX. CLAIMS APPENDIX

1. A light cover arranged to be placed over a light source emitting infrared radiation, wherein said light cover comprises an aircraft exterior light cover, wherein the light cover includes a reflective element angled with respect to said light cover for reflecting a portion of said emitted infrared radiation away from said light cover and substantially away from said light source.

2. A light cover according to claim 1, wherein said reflective element comprises an infrared reject filter.

3. A light cover according to claim 1, wherein said reflective element is partially mirrored.

4. A light cover according to claim 1 wherein said light cover is manufactured from a synthetic material.

5. A light cover according to claim 4, wherein said synthetic material is polycarbonate.

6. A light cover according to claim 4, wherein said light cover is coated with a scratch resistant layer.

7. A light cover according to claim 1, wherein said reflective element is further arranged to reflect said infrared radiation away from said light source.

9. A light assembly comprising:

a light source mounted within a housing, the light source emitting infrared radiation;

a light cover placed over said light source; and

a reflective element located between said light source and said light cover and angled with respect to said light cover, said reflective element for reflecting a portion of the emitted infrared radiation away from the light cover and substantially away from said light source.

**X. EVIDENCE APPENDIX**

None.

**XI. RELATED PROCEEDINGS APPENDIX**

None.